

## **AMENDMENT(S) TO THE SPECIFICATION**

**Please replace the paragraph beginning at page 3, line 29, with the following rewritten paragraph:**

A photonic element is defined as an element having a so-called photonic band gap. A photonic band gap is characterized by the fact that light whose wavelength resp. energy is located within the band gap cannot propagate in the photonic element. Such light will be reflected by the photonic element while it is transparent for other light. The location of this band gap can be rendered adjustable by suitable measures. One known measure is to embed a nematic and/or ferroelectric liquid crystal material in the photonic element. When an electric voltage is applied, the optical properties of the liquid crystal change and the band gap is simultaneously shifted by a however small frequency difference. Due to the steep flanks of the photonic band gap, it is nevertheless possible in this manner to achieve a complete tuning of the photonic crystal, i.e. for incident light whose frequency corresponds to the band gap, more particularly for a laser beam of such a frequency, the properties of the photonic element can be switched from transparent to reflecting.

**Please replace the paragraph beginning at page 6, line 12, with the following rewritten paragraph:**

The photonic elements of the prior art are composed of regularly arranged zones of different optical density, e.g. of corresponding crystal structures. Originally, only one-dimensional structures of this kind were manufactured, but at present, two-dimensional and three-dimensional photonic structures are also realizable, and particularly the latter two are used in the present invention. The photonic material contains cavities that are filled with a suitable material for influencing the band gap. In the case of a control by electric fields, the use of a nematic or ferroelectric liquid crystal for this purpose is known in the art. Experiments have shown that in this manner, a shift of the band gap by  $10^2$  Hz, possibly even up to  $10^6$  Hz is possible. The modulation frequency may reach several ~~±00~~ hundred KHz.